

Developing The Self-Accounting System Application Program

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Abstract

The study was conducted as a continuation of previous development research published in the International Journal of Environmental Science, Volume IV, No. 11, Pages 477-486, 2025. The purpose of this development is to 1) generate a Self-Accounting Application Program and 2) provide guidance for the usage of the Self Accounting Application program.

Research method using Design Based Research Model, which includes the following steps: 1. Problem identification and need, 2. Objectives, 3. Creating product design 4. Product Testing, 5. Product Testing Evaluation, 6. Product Communication. Researchers collect the data by questionnaire and interview. The collected data was analyzed by using descriptive statistics. The study successfully develops a Self-Accounting System Application, which is then named the Self Accounting System Application, which has been uploaded to the Play Store along with its user guide. The Self Accounting System Application was developed in response to the reality that the Muslim majority doesn't have a charity record to know how much spiritual wealth they have, and almost every Muslim has Android. Hence, the application was developed to allow Android users easy access. However, this research, which developed a self-accounting system application, had some limitations on data elimination (it didn't have the option to erase specific data; still, all the inputted data will be erased) and lacked a withdrawal menu. On the other hand, the next researcher suggested developing a self-accounting system application that can fill the gap from this research.

Keywords: Self Accounting System Application, Afterlife Assets, Alms, Infaq, Zakat, Waqf

INTRODUCTION

The previous research developed a product called the Self Accounting System. Nevertheless, the product is still old-way. As a result, people rarely used it (especially Moslems); they rarely utilized it. Therefore, this research tried to create a product in the form of an application with a computer program. Based on the product created before. The application program is expected to be well-received by society (especially Moslems).

A lot of applications are currently used and beneficial to people. For example, an application that can make it easy for people to communicate with one another, an application to do specific work, or an application to widen knowledge and entertain at the same time, example of commonly used application, as follows.

1. Desktop Based Application

Desktop-based application is software that is installed on a desktop computer or laptop. This type of application can typically operate without an internet connection or function offline (Hadianto: 2016; Saifudin, et al: 2022; R.A. Badres & I. Idris: 2022). However, to use it, the user must first install the software on their device. Desktop-based applications are generally developed using various programming languages, such as C#, Java, or Delphi. Examples of desktop-based applications include Microsoft Word, Microsoft Excel, Notepad, Adobe Photoshop, Corel Draw, Paint, and Smadav, etc.

2. Website Based Application

Website-based applications operate through a web server or a browser, such as Chrome, Firefox, or Opera. These applications can function with an internet connection or even on an intranet (LAN connection) (Raharjo: 2019; Abdulloh: 2023; Abdurakhimovich & Abdushukur: 2023; Pratama: 2022; Devangga Revanza, et al: 2022). Their main characteristic is easy access, which makes them popular and applicable in various aspects of human life. Typically, website-based applications are developed using HTML, CSS, and JavaScript. Examples of such applications include Gmail, Trello, Google Docs, Google Sheets, and YouTube, among others.

3. Mobile Application

Mobile applications, commonly referred to as mobile apps, are software designed to run on mobile devices such

as smart phones, tablets, and smart watches. The development of programming languages tailored specifically for mobile applications has been rapidly increasing. Some of the programming languages used for mobile app development include Kotlin, Java, Objective-C, Swift, Dart, JavaScript, and React Native (Putra et al: 2023; Gunawan: 2024; Habibi & Damayanti: 2019; Tanjung, et al: 2023). Notable examples of mobile applications are Whats App, Grab, Gojek, Halodoc, Instagram, and Twitter and etc.

RESEARCH METHOD

This research builds on the work of previous researchers by employing a research development approach. It utilizes model design-based research for product development, following these steps: 1. Problem identification and needs, 2. Objectives, 3. Creating product design, 4. Product testing, 5. Evaluation of product testing, 6. Product communication.

Research and Development Procedures

We conduct research and development procedures using the design-based research model. This process can be explained as follows:

Step 1: Identification of Problems and Needs. In this step, the researcher may distribute questionnaires to respondents and conduct interviews. The interviews are intended to uncover actual problems that may emerge after analyzing the data collected from the questionnaires.

Step 2: Objective Formulation. The research goal must align with the problem statement. If the research purpose is ambiguous, it can result in confusion and difficulties during product development.

Step 3: Product Development. In detail, the steps that researchers must carry out at this stage include

- a. Product Development. This phase typically requires a significant amount of time, as it marks the beginning of the primary activities of the research.
- b. Expert Validation. The purpose of expert validation is to ensure that the product design aligns with the expected specifications. This validation can be conducted through methods such as focus group discussions (FGD) or the Delphi technique. Researchers chose the Delphi method by providing the selected experts with the product design and a questionnaire to gather feedback.
- c. Revising the product based on critiques, instructions, and suggestions from the experts..

Step 4: Product Testing. Activities in this stage are crucial for determining the feasibility of the developed product. Product testing is conducted after obtaining validation from the expert team. Validation by the expert team aims to assess the theoretical feasibility of the product. In contrast, product testing is performed to evaluate the practical feasibility of the product.

Step 5: Product Testing Evaluation. Result evaluation is an essential activity for the researcher, involving the revision of the product based on feedback and recommendations gathered from field product trials.

Step 6: Product Communication. A product that has been deemed effective and ready for use is designated as a final product, which then needs to be communicated and disseminated. Dissemination can occur through various means, including publications in scientific journals, seminars, books, workshops, or training sessions, among others.

Data Analysis

Various data relevant to the study's needs are collected. This includes qualitative data, specifically the issues encountered by users, as well as feedback, recommendations, and input from experts, along with data obtained during product testing. Additionally, quantitative data is gathered, consisting of validator scores from experts and trial subjects. To collect this data, the researcher employs questionnaires and conducts interviews. Subsequently, the collected data are analyzed using descriptive statistical methods. The results of this analysis inform decision-making regarding whether the product is qualified or requires revision. To determine the level of product feasibility, calculations are performed using the following formula:

$$\text{Score} = \frac{SV_1 + SV_2 + \dots + SV_n}{SI \times n} \times 100\% \dots \dots \dots \text{Purwiyanto (2025)}$$

SI x n...

Where as:

SV_1 : I Validator Score
 SV_2 : II Validator Score
 SV_n : Score of the n-th validator
n : Validator Total
SI : Ideal score of each validator

Next, the obtained scores are mapped onto the effectiveness interval line as follows:

0-25	26-50	51-75	76-100
Less Effective	Effective Enough	Effective	Very Effective

... Source: Purwiyanto (2023)

Process and Product Development Results

A. Identification of Problems and Needs

Muslims believe good deeds are the key to success in this life and the next. Success in this world is often associated with the positive regard of others for those who engage in charitable deeds. Conversely, success in the Hereafter is believed to stem from these deeds, which serve as spiritual treasures guiding individuals toward ultimate happiness-specifically, eternal life in heaven. Therefore, it is crucial for Muslims to consistently monitor the variations in their deeds on a daily basis, making it essential to maintain a record of one's actions. However many Muslims often neglect to keep a record of their deeds. Concerns about *riya'* (the ostentation of good deeds), a strongly disapproved practice in Islam, often lead to this negligence. Consequently, it is not uncommon for Muslims to overlook the importance of maintaining a record of their deeds. The reality is that many Muslim individuals remain unaware of the status of their spiritual assets from one year to the next. In line with the questionnaire administered to respondents in the previous study, the researcher presented the following statements and questions:

The Prophet asserted that if your actions today mirror those from yesterday, you find yourself in a state of loss; if your actions today surpass those from yesterday, you find yourself in a state of doom; and if your actions continue to deteriorate, you find yourself in a state of doom. A truly successful person is one whose deeds today surpass those of yesterday.

Question: Do you, Sir/Madam/Brother/Sister, have a record of your deeds for today and yesterday?

Regarding this question, 87.5% of the respondents (Purwiyanto: 2025) indicated that they did not yet keep such a record. In the earlier study, the researcher also carried out interviews with informants, yielding the following responses.

"So far, I have never recorded the charity or other charitable deeds I have done. There is no specific reason for this; I simply am not accustomed to keeping such records." (Ahmad, Muslim, Congregant of Jami' Mosque, Malang, June 11, 2023; cited in Purwiyanto:2025).

Afterward, the researcher interviewed one of the righteous at the Al-Ihsan mosque at Residential Sukun Pondok Indah Area, Malang. The interview was done after Isha prayer. The results of the interview are as follows:.

"I have not heard about the self-accounting application, which is used in the media to note the righteous deeds of Muslim people." Anyway, I never noted the righteous deeds I did." (Bustami, Muslims, the righteous Al-Ihsan Mosque Malang, 12 June 2023). (Purwiyanto: 2025)

The researcher also did an interview at the righteous Firdaus Mosque in Malang after Maghrib prayer. As the result of the interview, as follows.

"In my opinion there's no habit to take a note the righteous deeds or other charities. Passed down from my family, never take a note the good things which ever did." (Shalehuddin, Muslims, one of righteous Firdaus Mosque Malang, 14 June 2023). (Purwiyanto: 2025)

From various interviews, the researcher can conclude that the majority of Muslims currently do not possess righteous deeds that reflect their spiritual wealth. Consequently, a Muslim is unable to determine whether they fall into the category of the fortunate, the deprived, or even the wretched. As the Prophet Muhammad (peace be upon him) stated, if one's deeds today are equal to those of yesterday, one is considered among the losers; if today's deeds are worse than yesterday's, one is regarded as among the wretched. A person is considered fortunate if their deeds today surpass those of yesterday (Khabbussila, 2023; Al Fitri, 2014; Masyadi, 2016). The conclusion from the interviews indicates that the majority of Muslims either do not keep track of their righteous deeds or lack a system to determine their spiritual wealth. As a result, there is a need for a method to record charitable deeds so that all Muslims can understand their own spiritual status. Specifically, an application program designed for tracking their beneficial deeds is necessary. Such a tool is currently unavailable.

B. Research Development Purpose

Consistency is an issue faced by many Muslims, and the aim of this research is to develop a Self-Accounting System Application as a tool to help individuals track their spiritual wealth.

C. Product Development

Overall, the developed product corresponds to the research objectives as outlined below. Detailed descriptions and supporting illustrations will be provided in Product 2: the User Guide for the Self Accounting System Application Program.

The Self-Accounting System Application

1. When downloading from the Play Store by the name "The Self Accounting" or link <https://bit.ly/46xNW09>, the user will see a welcome screen titled "Introductory Greetings."
2. After selecting the 'Next' button, the user will be presented with an option to make a voluntary donation (which is not mandatory). Donations will be used for the development of the application, with a portion allocated to individuals classified as economically disadvantaged.
3. By pressing the "Next" feature, the user will arrive at the Get Started screen.
4. Then, by selecting "Get Started Features," the user will access the Home form Self Accounting screen, which contains several menus, including:
 - a. The "Report" menu, where users can view reports on charitable activities.
 - b. The "Record" menu, which allows users to note expenditures, infaq, zakat, and waqf by clicking the "+" icon.
 - c. The "Reflection" menu, where users can assess their level based on their beneficial deeds: fortunate, at a loss, or doomed.
 - d. The "Account" menu, which enables users to delete recorded data. Additionally, the top of the screen will display records of previous transactions including infaq, zakat, alms, and waqf along with their cumulative total (spiritual wealth).

User Guide Self Accounting Application

1. Download application in Play Store or link <https://bit.ly/46xNW09> and *install*.
2. Wait for a while until the installation process was done.
3. After installed, running the Self Accounting Applications, in the first user interface will be as below (see Picture-1)

Picture-1. Home screen Self Accounting Application



4. Continued by click the button **Next**, you will be directed to the next screen (refer to Figure 2).



Figure 2. Screen 2 of the Self-Accounting Application

5. Continue by click the **Next** button, you will be directed to the next screen (refer to Figure 3), Proceed by clicking the button **Get Started**.



Figure 3. Screen 3 of the Self-Accounting Application

6. After that, the Home page of the Self-Accounting App will appear, displaying several menus: "Report," which allows users to view records of charitable activities; "Record," represented by a plus icon (+), for documenting infaq, charity, alms, and waqf; "Reflection," for accessing self-reflection; and "Account," which is used to delete data. Additionally, at the top of the screen, several records of previously performed activities (infaq, charity, alms, and waqf) will be displayed, along with their total accumulation, referred to as eternal wealth, as shown in Figure 4.



Figure-4 Main Screen (*Home*) Self Accounting Application

7. To record an activity (infaq, charity, alms, and/or waqf), click the plus (+) icon (*Record*) located at the bottom of the screen. Look at Figure-5



Figure -5 The screen display for selecting a recording option

8. To record zakat for the *current date*, first select the zakat icon (see Figure 5). Next, enter the amount of zakat, provide a note if necessary (see Figure 6), and click **Save** to store the record or **Cancel** to

discard it (refer to Figure-7)

If you want to record a charitable activity for a past date, month, or year, first click the **Today** button (see Figure 6), then adjust the desired date, month, and year (see Figure 8) before entering the amount.

Figure -6 Charity record for the current date (*today*)

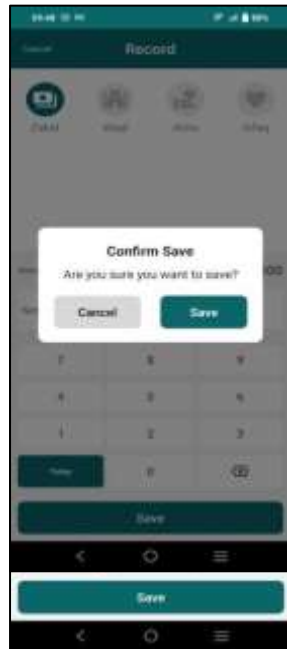


Figure -7 Data Storage Confirmation



Figure -8 Selecting the date, month, and year for the record

9. **Report** Menu can be used to know charity good deeds from the noted (infaq, zakat, alms and/or waqf). By clicking the **Report** menu, the report will be displayed (see Figure-4). We can choose *report by date*, *report by month*, or *report by year* (see Figure-9).

Figure-9. Screen view of chosen report

10. Afterwards we can see the reflection of notes our charity (infaq, zakat, alms and waqf) optimized with features **Reflection**. The result will appears a comment: **"You are categorized as belonging to those who incur**



losses" if the merits of this year equal to the merits of last year; or **"You are classified among those destined for misfortune"**, if this year's merits are fewer than those of the preceding year; or **"You are classified as belonging to those who are fortunate."** If this year's merits exceed those of the preceding year (see Figure-10).

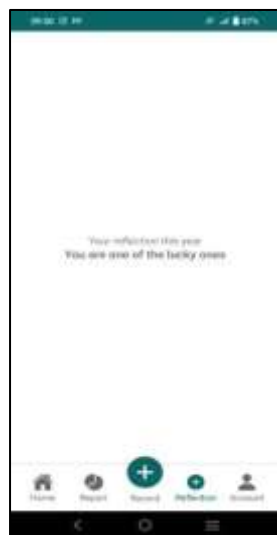


Figure-10 User interface *Reflection*

11. As the application stores data within the smart phone's internal memory, which may eventually reach capacity, it is occasionally necessary to carry out data deletion. The procedure involves utilizing the data reset feature by first clicking the Account icon, then selecting Reset Data Donation, after which a confirmation message will be displayed to proceed with the data reset. Click Reset if you are sure you want to delete data, and click Cancel to undo your action.



Figure-11 Reset Data

D. Product Testing

Product testing consists of two stages. The first stage is expert validation, which aims to assess the product's feasibility from a theoretical standpoint. The second stage is field testing, which evaluates the product's feasibility from a practical standpoint. Below are the results of the product testing based on expert feedback and field testing.

1. Expert Validation

Several experts were invited to participate in the validation process. The criteria for selection required that each expert hold at least a bachelor's degree in computer science and possess experience in program development. Following these criteria, the researcher chose three experts to validate the product.

Tabel 1 Experts Score

Criteria	A-1	A-2	A-3	Total
Clear	5	4	4	13
Simple	4	4	4	12
Beneficial	5	5	5	15
Total	14	13	13	40

Data analysis obtained from the scores assigned by the validators serves to determine the feasibility of the Self-Accounting System, as presented in the following data processing.

1. Clearly = $\frac{13}{15} \times 100\% = 87\%$
2. Easy = $\frac{12}{15} \times 100\% = 80\%$
3. Useful = $\frac{15}{15} \times 100\% = 100\%$

Assessment criteria are as follows

0-25	26-50	51-75	76-100
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Poor Effective	Enough Effective	Effective	Very Effective
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Source: Purwiyanto (2018)

Remark:

Numeral 0% - 25% : Less Effective

Numeral 26% - 50% : Effective Enough

Numeral 51% - 75% : Effective

Numeral 76% - 100% : Very Effective

Based on the calculations and assessment table, the results indicate that the Self-Accounting System Application is highly effective in the 'Clarity' aspect, highly effective in the 'Ease of Use' aspect, and also highly effective in the 'Usefulness' aspect.

In general, the Self Accounting System Application was found to be highly effective, with a score of 89%, which was obtained from:

$$\text{Self-Accounting System Application} = \frac{40}{45} \times 100\% = 89\%$$

However, the experts provided several remarks, which are outlined as follows.

a. Expert I

The Self Accounting Application is a valuable tool for recording charitable donations for Muslims. However, I need to consider the Account menu further, particularly regarding the data deletion feature. Currently, there is no indication of which day, date, or year will be deleted. In practice, using the 'Delete' menu results in the complete removal of all data from the beginning to the end. It would be beneficial to have options that specify which data should be deleted.

b. Expert II

It is excellent. This application runs on the Android platform. It has potential. for utilization by Muslims is very great. As now the majority of Muslims use Android, Android can be brought anywhere. Fight and good luck.

c. Expert III

It would be preferable for the Self-Accounting System application to include a 'Print' menu, which I have not observed in the application thus far. This feature is important because printing allows the user to have a physical copy of the document. Additionally, in the Account Menu, specifically the Delete option, all data will be permanently erased. According to feedback from the expert team, particularly Expert III, the researcher recognizes that the lack of a 'Print' menu in the Self-Accounting System Application is a limitation of this development research and will be addressed in future studies. The critique provided by Expert I is also acknowledged. Appreciation is extended to Expert II

2. Field Testing

In the field test, the researcher instructed the test subjects to simulate entries for afterlife assets, zakat, infaq, alms, and waqf using the Self Accounting System application (the transaction simulations were prepared by the researcher). There were no difficulties during the field testing, whether from a technical standpoint or regarding the substance of the Self Accounting System Application. The Self Accounting System Application proved to be effective for all test subjects. M. Rofiudin even commented that the Self Accounting System Application is simple to apply. M. Haris Fauzi expressed the same statement, starting that the Self Accounting System Application is easy to implement.

E. Evaluation of Product Test Results

The results of the field product testing showed no significant obstacles. All test subjects were able to use the Self Accounting System Application effectively. Additionally, there were no critiques or suggestions for improvement. Therefore, the product design (prototype) in this study can be considered a finished product.

F. Product Communication

The development of the Self Accounting System Application is complete and ready for implementation. To share the findings, the researcher plans to publish the results in a scientific journal, write a book about the Self

Accounting System Application, present at seminars, and conduct training sessions.

Notes for Researchers on the Self-Accounting Application System

This document outlines key points regarding the Self-Accounting System Application.

1. Advantages of the Self-Accounting System Application

The development of self-accounting system applications is significant for Muslims. Muslims believe that these applications, which provide clarity about the assets intended for the hereafter, contribute to their attainment of Paradise (Allah SWT). Therefore, it is highly recommended that Muslims use the Self Accounting System Application to keep track of zakat, alms, infaq, and waqf.

We developed the Self Accounting System Application using the recognized Design-Based Research model, making it feasible for implementation. This model allowed for validation of the product design by a team of experts, followed by field testing to assess the product's theoretical and practical feasibility.

The Self Accounting System Application is user-friendly and designed for mobile platforms, making it accessible for users who typically carry their mobile phones everywhere. By recording charitable activities with the Self Accounting System Application, Muslims can monitor their balance of assets in the hereafter at any time. This practice encourages self-reflection on charitable activities, in line with the Prophet Muhammad's (peace be upon him) saying: "If your deeds today are the same as those of yesterday, then you are among the losers; if your deeds today are worse than those of yesterday, then you are among the doomed." A truly successful person is one whose deeds today surpass those of yesterday.

2. Limitations

Despite its strengths, the Self-Accounting System Application has some limitations:

- a. The "Delete" menu currently erases all charitable activity without allowing users to select specific days, dates, or years for deletion. Once data is deleted, users lose all records of their charitable deeds.
- b. The application is not equipped with a print menu at this time.

In light of these limitations, the researcher recommends the following:

a. Suggestions for Utilization

For Muslims using the Self Accounting System Application to track charitable activities and assets for the hereafter, it is advisable to keep the results private. This is to avoid the risk of "riyā" (showing off), which is strongly condemned in Islam. The Self Accounting System Application only generates records for personal use, and this also applies to the results of one's self-reflection.

b. Suggestions for Further Development

Future research should focus on adding a print menu and improving the functionality of the Delete Data menu.

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